

APRIL/MAY 2025

**CSSC33 — DESIGN AND ANALYSIS OF
ALGORITHM (SBS-I)**

Time : Three hours

Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is meant by sorting?
2. Define partitioning in sorting.
3. What is divide and conquer?
4. Tell about Greedy method.
5. What is weighted tree?
6. Define shortest path.
7. Draw a directed graph with four vertices and five edges.
8. What is spanning Tree?
9. Define Least cost search.
10. What is meant by flow shop scheduling?



SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Describe the merge sort algorithm.

Or

- (b) Write about the Strassen's matrix multiplication.

12. (a) Write about the tree vertex splitting problem.

Or

- (b) Explain the prim's algorithm.

13. (a) Discuss the general method of dynamic programming.

Or

- (b) Describe the ALL-Pair shortest paths problem.

14. (a) Explain the connected components with spanning tree.

Or

- (b) Write about the 8-queens problem.

15. (a) Explain the some simplified NP-Hard problems.

Or

- (b) Short notes on the genetic algorithm.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the Binary search method.

17. Describe the Kruskal's algorithm with example.

18. Write the multistage Graphs with algorithm.

19. Explain the Breadth First Search and Traversal Algorithm.

20. Explain the Cook's theorem in details.

